

A Roadbuild Scenario

One question occasionally asked about the transportation issue in Boulder (and the TMP Update) is:

"Why don't we just build more roads?"

This is a valid and appropriate question. Building more roads is what we have traditionally done.

When our existing roads got congested, we added more lanes, built interchanges to replace intersections, even built entirely new roads (like Foothills Parkway, for example).

So why can't Boulder continue doing this?

Opponents to roadbuilding often answer this question by asserting that "if you build it, they will come." In other words, if Boulder builds more roads, or adds to its existing roads, traffic will increase and fill up the new lanes.

However, the City felt it would be useful to actually undertake a technical evaluation of a "road building" alternative to determine what value it might have and what impacts it might generate.

This alternative was designated "Scenario F." The Scenario F analysis was based on four assumptions:

- (1) Travel behavior in 2020 (what modes we use and so forth) would be about the same as today; the City would not pursue strategies to reduce SOV reliance.
- (2) Land development would proceed according to the City's medium growth scenario (same as in Scenario A).
- (3) The City would try to add roadway capacity wherever congestion is expected to be a problem by 2020.

- (4) However, the added roadway projects would be limited to those that could actually be built and would not include impossible or unrealistically difficult projects. In other words, the analysis is not designed to bias the result against a road building approach.

For example, although Broadway through downtown would be congested under Scenario F, the removal of major buildings to accommodate further street widening is not included in this scenario.

Scenario F Transportation Program

Under Scenario D (TMP Update), a substantial amount of roadway investments would be made over the 25-year period. These would include:

- \$18.7 M routine street maintenance/repair
- \$8.4 M street capital maintenance
- \$21.1 M efficiency projects

(Most of the roadway efficiency projects in the TMP Update are intersection improvements.)

All of these investments would also be included in Scenario F.

Additional roadway investments to be made under Scenario F (beyond those planned under Scenario D) would be designed to address congestion and would include:

- roadway capacity projects - added lanes, new interchanges;
- new roads; and,
- intersection reconstruction.

These additional investments would be made in the following corridors:

Broadway
US 36 (28th Street)
Foothills Parkway
Diagonal Highway
Lookout Road
Iris Avenue
Valmont Road
Pearl Avenue
Pearl Parkway
Arapahoe Road
Baseline Road

Major new interchanges would be built on Foothills Parkway at:

Valmont Road
Arapahoe Road
Colorado Avenue
Baseline Road

Pearl Parkway would be extended to provide a four-lane connection to Gunbarrel.

In addition, major intersection reconstruction would be undertaken at:

Broadway and Iris
28th and Valmont
28th and Pearl
28th and Colorado
30th and Pearl
30th and Baseline
Pearl and Folsom
Broadway and Canyon
Baseline and US 36

These projects would add about 45 lane miles of roadways to Boulder's street system which would grow from 475 lane miles of arterials and collectors today to 520 lane miles in 2020.

The estimated cost (1995 dollars) of this additional work would be just under \$200 million. This estimate includes about \$43 million in right-of-way acquisition costs.

A complete list of the roadway projects added to Scenario D to create Scenario F is provided at the end of this appendix.

Table b-1.
Scenario F 25-Year Financial Program

(1996 -2020; \$ in millions)	TMP Financial Plan	Scenario F	
		Adjust	Resulting Plan
System Preservation, Travel Safety			
Streets: Auto-related	\$ 129.2	\$0.0	\$ 129.2
All other (bike, ped, etc.)	42.3	0.0	42.3
Functional Efficiency, Capacity, Quality of Life			
Streets: Auto-related	91.9	+197.8	289.7
All other (bike, ped, transit, etc.)	341.0	- 199.3	141.7
TOTAL CAPITAL AND PROGRAM NEEDS	\$ 604.4	\$ 197.8	\$ 602.9
ROUTINE OPERATIONS, MAINTENANCE	485.4	1.5	486.9
TOTAL ALL NEEDS	\$ 1,089.8	\$ 0	\$ 1,089.8

Table b-1 shows the transportation expenditure program estimated for Scenario F. The center column of numbers in the table indicates the changes required to implement Scenario F.

A case could be made that the costs of the additional roadway improvements in Scenario F could be offset by reduced expenditures in the transit program. This could be the approach taken and is the assumption made in building Table b-1. As a result, Table b-1 arrives at the same 25-year total for Scenario F as for Scenario D.

Table b-2. Remaining Alternatives Modes Program

(1996 -2020; \$ in millions)

Bicycle Lanes and Bikeways	\$ 30.4
Greenways	16.9
Pedestrian Facilities	27.2
Grade Separations	14.5
Expanded Transit	52.7
TOTAL	\$ 141.7

Table b-2 shows a possible allocation of the “needs” costs shown in the TMP Update in the non-auto categories after subtraction of \$199.3 million for roadway improvements. This \$141.7 million estimate includes all of the identified bicycle and pedestrian system needs.

The \$52.7 million shown on the transit line would be sufficient to cover normal growth in transit ridership and most or all of the increased cost of transit service attributable to increased roadway congestion (described below).

An important point to keep in mind is the fact

that the TMP transportation program cannot be fully funded from existing revenue sources.

Of the estimated \$1.1 billion in needs, only about \$700 million will be available from current sources. Most of that will go into operations and maintenance of the existing transportation system.

Table 8-5 on page 8-11 in the TMP Update identifies the planned 25-year financial program. About half of the costs of making improvements to existing streets, much of the bicycle and pedestrian system costs, and virtually all of the transit system needs are shown as unfunded.

Thus the issue is not whether to shift funding from alternative modes programs to roadway construction, but rather should the City seek increased funding, and if so for what?

Project Impacts

Construction of the additional roadway projects contemplated by Scenario F would generate substantial negative impacts.

Widening Arapahoe Avenue from Broadway to Folsom would take out many mature trees, would require removal of a row of homes, and would place the street edge closer to remaining homes and businesses. The character of this street would change dramatically.

According to the recently-completed Foothills Parkway Congestion Management Study, building new interchanges along this highway would create as many problems as it would solve. New interchanges on Foothills Parkway would increase the number of vehicles flowing through that corridor significantly with the result that traffic and congestion on intersecting east-west roadways -- Baseline, Arapahoe, Valmont -- would increase. (As a result, the corridor study recommends against the

interchanges.)

Adding lanes to Broadway between US 36 and Norwood, and between Table Mesa Drive and Marshall Road would move traffic closer to homes and would require construction of noise walls or berms to reduce impacts on the affected neighborhoods.

Many of the add-lanes projects (e.g., Lookout Road, Baseline, Iris, and US 36) would result in higher levels of traffic on those roads and would move the roads closer to neighborhood homes and businesses.

In most of these corridors, bicycle and pedestrian travel would become less feasible because of increased crossing distances and higher levels of adjacent traffic. In some of these corridors, providing room for additional lanes might only be possible by reducing space available for bicycles and pedestrians.

Access to the transit system would become more difficult because street crossings for pedestrians would be more difficult and traffic levels on the new wider streets would be higher.

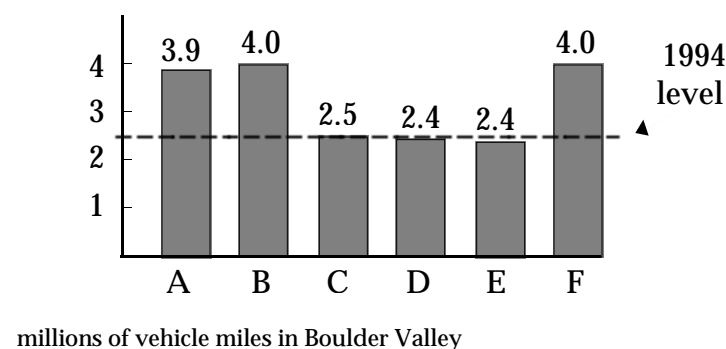
Program Impacts

Under Scenario F, daily vehicular travel in Boulder Valley would grow significantly by 2020.

Daily traffic would increase by 46% and daily vehicle miles traveled in Boulder Valley would be 60% higher than today.

Much of the increased traffic shown in Figure b-2 would come from increased vehicular trips

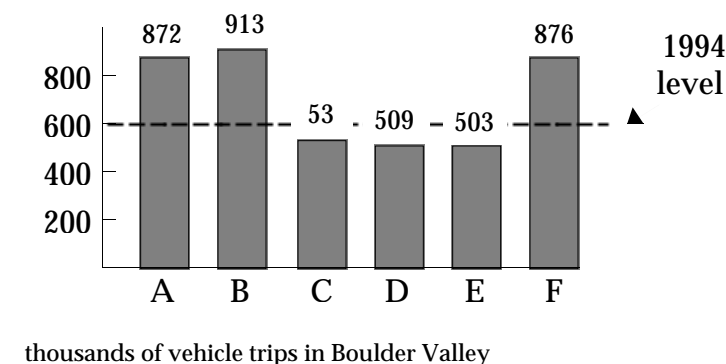
Figure b-1
Daily VMT in 2020



coming into Boulder from cities and towns in the eastern parts of Boulder County. This would impact the east-west arterials such as Valmont, Pearl, Arapahoe, Baseline and South Boulder Road. The Diagonal Highway and US 36 would also see significant increases in traffic.

At the same time, the congestion relief benefits of the Scenario F projects would be limited. The

Figure b-2
Daily Traffic in 2020



Boulder street system would grow from 475 lane miles of arterial and collector streets to 520 lane miles.

Congestion, which the TMP Update proposes to hold at 16% of the arterial and collector street system (Scenario D), would increase to 51% under Scenario F - only 9% less than the level forecast for the no intervention scenario (A).

Most of the corridors in which projects would be built would continue to be congested. This includes Arapahoe Road, 28th Street, Broadway and Foothills Parkway.

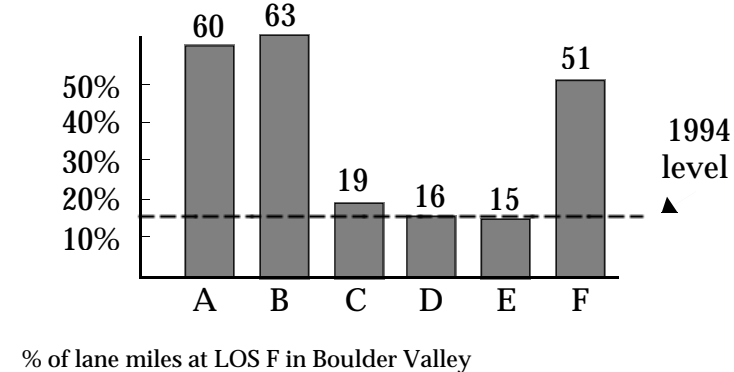
Average speed arterial/collector vehicle speeds (28.3 mph) - another indicator of congestion - would be about the same as today, but 2% faster than Scenario D and 4% faster than Scenario A.

Because daily vehicle miles would increase and arterial and collector congestion would be much greater, resulting traffic on neighborhood streets would be much higher than today. Drivers would attempt to avoid congested major streets by taking other routes.

Cross-town traffic on collector streets (such as Balsam) would increase. Cut-through traffic on local streets like Moorhead and Norwood would also increase.

Air pollution from mobile sources would be worse under Scenario F than under any of the other scenarios evaluated, including Scenarios A and B.

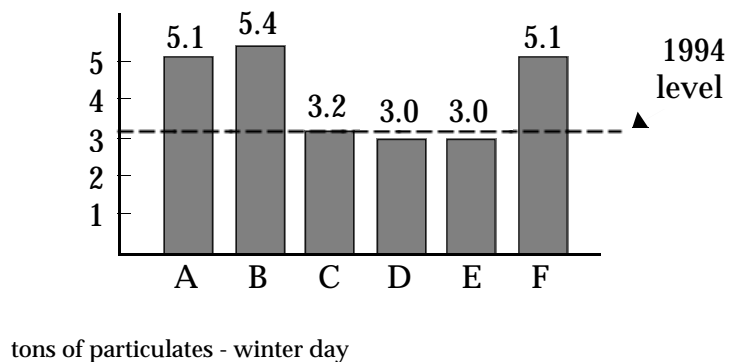
Figure b-3
Roadway Congestion in 2020



Daily emissions of critical pollutants - particulates, hydrocarbons, nitrogen oxides, and carbon monoxide - would be somewhat higher than under Scenario A, and significantly higher than under Scenario D, the recommended alternative of the TMP Update.

Daily mobile source emissions of particulates would be higher under Scenario F than they are today.

Figure b-4
2020 Mobile Source Emissions



Summary

It is apparent that building enough new roadway capacity to hold congestion at today’s levels is not physically feasible and would entail negative impacts unacceptable to the public. The road capacity projects contained in Scenario F included all roadway investments that appeared to be at least potentially buildable. Arguably, some of the projects might not be buildable.

Scenario F indicates that the City will not be able to build its way out of roadway congestion problems. Adding significant capacity to the roadway system would cost \$200 million and would reduce the amount of congestion very little. The scenario would provide little added roadway capacity to the City’s major destinations, since these popular areas are exactly the locations where little space remains for additional roadway lanes.

The associated impacts of the roadway construction projects and increased traffic - noise and traffic levels, air pollution emissions, congestion, and degraded bicycle and pedestrian systems - make this alternative much less attractive than the recommended program. However, Scenario F would be no less expensive than the plan contained in the TMP Update.

The bottom line is: if travel behavior in 2020 continues to favor motor vehicle travel, (specifically, single occupant motor vehicle travel), congestion in Boulder will be much worse than it is today and the impacts associated with increased traffic levels will have a significant impact on our quality of life. A transportation program oriented toward roadbuilding strategies will not solve these problems.